

CLAIMS

1. An articulating coupling (4) for a vehicle assembly formed of a motor vehicle (1) and a trailer (2) comprising friction surfaces for damping yaw movement characterized in that it is composed of a first pivot articulation (12) allowing only yaw movements comprising a pivoting disc for damping yaw movement (40) by the trailer, said first articulation housed within a closed space protected from incoming pollution, and a second articulation (21) allowing rolling and pitching movement, and transmitting the yaw movement to the first articulation without play, with the axle for yaw movement being completely disconnected from the axles for rolling and pitching movement.
2. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the pivot articulation allowing yaw movement comprises a bearing rim (12).
3. An articulating coupling for a vehicle assembly according to either one of the preceding claims, characterized in that it comprises an articulation for rolling and pitching movement (21) allowing no play at the level of that articulation.
4. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the absence of play during yaw movement is ensured by the even planar contact of its opposing plane surfaces (37, 38).
5. An articulating coupling for a vehicle assembly according to any one of the preceding claims characterized in that the articulation for rolling and pitching movement is a spherically shaped articulation (21).
6. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the articulation for the rolling and pitching movement (21) comprises a transverse axle (23) with two rings (29, 30) aligned on it that have complementary spherical shapes.
7. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the rings (29, 30) are attached without any possibility of lateral play being assimilated by yaw movement.
8. An articulating coupling for a vehicle assembly according to any one of the

preceding claims characterized in that the device for damping yaw movement (40) comprises at least one disc (41) cooperating with a least one opposing surface applied against the disc by a compression system exerting an axial compression force on the disc(s), at least one of said opposing surfaces being a friction surface.

9. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the device for damping yaw movement (40) comprises a stack of friction discs (41) alternately connected to the motor vehicle (1) or to the trailer (2), pivoting in relation to one another under the influence of yaw movement.
10. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the stack of friction discs (41) contains at least one fixed disc (48) integral with a central hub (42) that is fixed in relation to the motor vehicle (1) and at least one movable disc (49) integral with a peripheral drum (43) that is movable in relation to the vehicle.
11. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the exterior wall (46) of the hub (42) has notches and in that at least one of the fixed discs also has complementary notches on its interior periphery around a cutout (50) so that it remains fixed as it pivots in relation to the central hub (42).
12. An articulating coupling for a vehicle assembly according to claim 10 or 11 characterized in that the interior wall (47) of the peripheral drum (43) has notches and in that at least one of the movable discs (49) also has complementary notches on its exterior periphery so that it is driven to pivot by the peripheral drum (43).
13. An articulating coupling for a vehicle assembly according to any one of claims 9 through 12 characterized in that the compression system comprises a cupel (54) that contacts a stack of discs (41), forming a complete contact with the friction surfaces.
14. An articulating coupling for a vehicle assembly according to any one of claims

- 8 through 13 characterized in that the compression system for the yaw damping device (40) is a mechanical system.
15. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that the mechanical compression system for the yaw damping device (40) comprises at least one spring (52).
16. An articulating coupling for a vehicle assembly according to claim 14 or 15 characterized in that the mechanical compression system for the yaw damping device (40) cooperates with a damping deactivation device capable of reducing or interrupting damping below a certain travel speed.
17. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that at the appropriate times, the damping deactivation device exerts axial force in the opposite direction to the compression force, thereby freeing the friction surfaces.
18. An articulating coupling for a vehicle assembly according to any one of claims 8 through 13 characterized in that the compression system for the yaw damping device (40) is a pneumatic, hydraulic, or electric system capable of exerting axial compression force.
19. An articulating coupling for a vehicle assembly according to the preceding claim characterized in that it further comprises a control circuit for regulating the compression force applied by the hydraulic, pneumatic, or electric compression system.
20. An articulating coupling for a vehicle assembly according to claims 10 and 13 characterized in that its exterior wall (8) has a threaded transverse opening (57) located opposite a bore (44) in the hub (42) for measurement of wear on the friction discs (41) or for insertion of a threaded axle to exert increasing pressure on the cupel (54) and free the friction discs (41).